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SOURCE SAMPLING

FINE PARTICULATE MATTER:

WOOD-FIRED INDUSTRIAL BOILER

Prepared for

Office of Air Quality Planing and Standards

Prepared by

National Risk Management
Research Laboratory
Research Triangle Park, NC 27711

Foreword

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E. Timothy Oppelt, Director
National Risk Management Research Laboratory

EPA REVIEW NOTICE

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Source Sampling Fine Particulate Matter:

Wood-Fired Industrial Boiler

by

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Abstract

Fine particulate matter of aerodynamic diameter 2.5 μm or less (PM-2.5) has been implicated in adverse health effects, and a National Ambient Air Quality Standard for PM-2.5 has been promulgated (July 1997) by the U. S. Environmental Protection Agency. A national network of ambient monitoring stations has been established to assist states in determining areas which do not meet the ambient standard for PM-2.5. For such areas, it is important to determine the major sources of the PM-2.5 so states can devise and institute a control strategy to attain the ambient concentrations set by the standard.

One of the tools often used by states in apportioning ambient PM-2.5 to the sources is a source-receptor model. Such a model requires a knowledge of the PM-2.5 chemical composition emitted from each of the major sources contributing to the ambient PM-2.5 as well as the chemical composition of the PM-2.5 collected at the receptor (ambient monitoring) sites. This report provides such a profile for a wood-fired industrial boiler equipped with a multistage electrostatic precipitator control device. Along with the PM-2.5 emission profile, data are also provided for gas-phase emissions of several organic compounds. Data are provided in a format suitable for inclusion in the EPA source profile database, SPECIATE.

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